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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/548,637

04/13/2000

John R Koza

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6771

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12/11/2008

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EXAMINER

WONG, LUT

ART UNIT

PAPER NUMBER

2129

MAIL DATE

DELIVERY MODE

12/11/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/548,637	Applicant(s) KOZA ET AL.	
	Examiner LUT WONG	Art Unit 2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 12-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 12-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is responsive to an RCE AMENDMENT entered Nov 04, 2008 for the patent application 09/548637.

The office action of Aug 04, 2008 is fully incorporated into this office action by reference.

Status of Claims

Claims 1-6, 12-23 are pending. Claims 1, 14-16, 22-23 have been amended. Claims 7-11 have been canceled.

Response to Arguments

Applicant's amendment has overcome previous spec and claim objection, 112 and 101 rejections.

Drawing objection is maintained.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

- 1) Claim 12 recites "internally invokable". Such term is not described in the spec.

Claim Objections

Claims 1, 22-23 are objected to because of the following informalities:

Claim 1, 22 and 23: “each iterative genetic programming operation including” should be changed to “each iteration including”.

Similarly, claim 1, 22 and 23: “end of each iterative genetic programming operation” should be changed to “end of each iteration”.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 23 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 23 constitute software modules devoid of any apparent hardware, and therefore are computer programs e.g., functional descriptive material. Since the computer programs are not embodied on an appropriate computer-readable “storage” medium, they cannot be afforded patent eligibility. The intrinsic evidence of inappropriate computer readable “storage” medium, i.e. signals, can be found at applicant's disclosure pg. 33.

Claim Rejections - 35 USC § 112

Claim 12 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

Claim 12 recite “internally invokable sub-entity”. Where in the spec supports these terms?

Since the applicant cancels claims 9-11 in this reply to advance the prosecution, the Examiner suggests cancelling claim 12 as well to advance the prosecution.

Claim Rejections - 35 USC § 103

Claims 1-6, 12-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicants' admitted prior arts (APA) by Koza et al, (US 5867397) and in view of another APA (Ullman, J.R) as set forth in the previous office action.

Claims 1, 22, and 23: the amended limitation “wherein the end-result structure does not possess key characteristics of the reference structure” is nothing more than intended result. It does not affect the method steps in any patentable sense.

Furthermore, the amended limitation “updating the iteration count at the end of each iterative genetic programming operation” is nothing more than inherent nature of genetic programming. i.e. updating iteration counts are inherent in genetic programming and are well known in the art.

Response to Arguments

In re pg. 10-12, Applicant's arguments have been fully considered but they are not persuasive.

In re pgs. 10-11, applicant argues

As stated in the background section of the present application, the prior art does "not address the problem of automatically creating novel structures that meet design requirements and that do not possess key characteristics of preexisting technology." Page 17, lines 2-3. Similarly, "the previously cited efforts for the automatic synthesis of antennas did not address the problem of automatically creating antennas that satisfy the

basic technical design requirements of the antenna and that simultaneously avoid the key characteristics of the preexisting antenna technology." Page 20, lines 16-19.

In response, the Examiner agrees. This is exactly why 103 rejections were made. Should the APA by Koza alone is sufficient to teach the claimed invention, it would be a 102 rejection instead.

In re pg. 11, applicant argues

Applicant respectfully submits that the proposed combination of Koza and Ullman does not teach or suggest all of the claim limitations of claims 1-6, 12-23. In particular, neither Koza nor Ullman teach or suggest "creating an entity that satisfies a predetermined design requirement that at least one characteristic is not in a reference structure" and "wherein the end-result structure does not possess key characteristics of the reference structure."

In response, the Examiner disagrees.

1) See the rejection above that the amended limitations are nothing more than intended result and inherent property.

2) As set forth in the previous office action, 12/10/2007 pgs. 10-11, Koza et al teaches creating design that satisfy technical requirement by using genetic programming (See e.g. spec pg. 2, 9, 11-13, 37). Koze et al teaches determining

Art Unit: 2129

fitness of entities, selecting entities, and creating new entities (See e.g. spec pg. 9).

Koza et al does not teach creating *novel design* that satisfying both technical requirement and having characteristic not in prior art. However, one of ordinary skill in the art would know that the only difference in “creating a design” to “creating a *novel design*” is adding one more constraint to the multiobjective function. Such constraint is, of course, requiring the designed entity having characteristic not in prior art (*EN: this is exactly what’s being amended and why it is an intended result*). Hence, one of ordinary skill in the art whom is aware of “novelty design” would immediately motivated to added another variable in the objective function or fitness measure to obtain a predictable result of “creating novel design”. Isomorphism value, as admitted by the applicant, is one of the many well known method that can be used to represent dissimilarity between candidate entity and the prior art (See e.g. spec pg. 95). Hence, one of ordinary skill in the art could have applied the isomorphism value together with the technical requirement as a measure of fitness to achieve the predictable result of “creating novel design”. It is merely applying known technique to known method. See *KSR International Co. v. Teleflex Inc.*, 550 U.S.--, 82 USPQ2d 1385 (2007).

In re pg 11, applicant argues

As acknowledged in the office action of 12/10/07, Koza '397 patent fails to disclose creating a new entity that avoids certain features of a prior art. (see e.g., 12/10/2007 Office Action, pages 10-11). In particular, Koza '397 patent fails to disclose using genetic programming techniques to fine tune a structure to both satisfy a predetermined design requirement and avoid certain limitations of a preexisting structure as claimed. Thus Koza '397 fails to disclose "creating an entity that satisfies a predetermined design requirement that at least one characteristic is not in a reference structure" and "wherein the end-result structure does not possess key characteristics of the reference structure."

In response, the Examiner agrees. Again, this is exactly why 103 rejections were made. Should the APA by Koza alone is sufficient to teach the claimed invention, it would be a 102 rejection instead.

Applicant's argument seems to be a piecemeal analysis of the reference.

In re pg 11, applicant argues

Ullman reference discloses a method using an isomorphism value. However, Ullman does not disclose or suggest such a method can be used in genetic programming to design an entity structure. Specifically, there is no disclosure or suggestion using genetic programming techniques to fine tune a structure to both satisfy a predetermined design requirement and avoid certain limitations of a preexisting structure as claimed. Thus Ullman fails to disclose "creating an entity that satisfies a predetermined design requirement that at least one characteristic is not in a reference structure" and "wherein the end-result structure does not possess key characteristics of the reference structure."

In response, the Examiner agrees. Once more, this is exactly why 103 rejections were made. Should the APA by Ullman alone is sufficient to teach the claimed invention, it would be a 102 rejection instead.

Applicant's argument seems to be a piecemeal analysis of the reference.

Art Unit: 2129

In re pg 11, applicant argues

Therefore, for reasons set forth above, it is respectfully submitted that the present invention as claimed is patentable over the Koza '397 patent and the Ullman reference.

In response, the Examiner agrees.

1) Applicant's conclusion seems to be derived from the piecemeal analysis of references above.

2) The Examiner has set forth why one skill in the art would/could have combined both references with predictable result. See above and previous office action.

3) As such, the proposed claim amendment still fails to overcome the rejections

Conclusion

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lut Wong whose telephone number is (571) 270-1123. The examiner can normally be reached on M-F 7:30-5.

Art Unit: 2129

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent David can be reached on (571) 272-3080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Lut Wong/
Patent Examiner, AU 2129

/Joseph P. Hirl/
Primary Examiner, Art Unit 2129